Aberdeen Proving Ground — Edgewood Area and Michaelsville Landfill — NPL

Size: 72,516 acres
Mission: Develop and test equipment and provide troop training
HRS Score: 31.09 (Michaelsville Landfill); placed on NPL in October 1989
53.57 (Edgewood Area); placed on NPL in February 1990
IAG Status: IAG signed in March 1990
Contaminants: VOCs, SVOCs, arsenic, phosphates, PCBs, explosives, nitrates, solvents, petroleum products, pesticides, heavy metals, asbestos, low-level radioactive waste, and chemical-agent materials and their degradation products
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $332.2 million
Estimated Cost to Completion (Completion Year): $761.4 million (FY2051)
Final Remedy in Place or Response Complete Date: FY2019

Edgewood and Aberdeen, Maryland

Restoration Background

Environmental studies, beginning in FY83, identified eight areas of contamination, including chemical munitions and manufacturing waste sites. RCRA Facility Assessments identified 319 solid waste management units (SWMU), which were combined into 13 study areas. Removal Actions completed in FY91, FY92, and FY93 included removal and incineration of soil contaminated with polychlorinated biphenyls (PCB) and DDT. In FY93 and FY94, 12,500 tons of soil from the fire training area that were contaminated with petroleum hydrocarbons and trichloroethene were removed and incinerated.

Remedial Investigations and Feasibility Studies (RI/FS) identified high levels of hydrocarbons in groundwater in four study areas. RI/FS also identified small amounts of volatile organic compounds (VOC) in on-post parts of tributaries to Chesapeake Bay.

In FY91, the Army and regulators signed an Interim Record of Decision (ROD) for the Old O-Field Site and a ROD for no further action for the White Phosphorous Underwater Burial Site. The Army completed a Remedial Action (RA) to install a cap-and-cover system at the Michaelsville Landfill.

In FY95, the installation completed 12 Removal Actions, including removal of underground storage tanks (UST), a white phosphorus-contaminated scrubber tower, and UXO found on the surface along the Edgewood Area Boundary. The installation converted its technical review committee to a restoration advisory board (RAB). The RAB's 20 members meet monthly to discuss proposed actions.

In FY96, the Army and regulators signed RODs and completed remedy designs for the Building 103 Dump Site and the Building 503 Burn Sites. Final RODs were signed for the J-Field Soil Operable Unit (OU); the former Nike Site, Cluster 1 (ground-water, landfill, and sewer lines); and the Carroll Island OU A (disposal pits). The installation completed draft RIs for the O-Field Site, Carroll Island (sitewide), and Graces Quarters (groundwater). It also prepared final RIs for Michaelsville OU2 (groundwater) and the Western Boundary Groundwater OU.

Removal Actions were completed at nine sites. Site characterization began in the Lauderick Creek Boundary chemical weapons/munitions (CWM) Removal Action and at the Westwood Radiological Materials Disposal Facility. The Army began constructing the 2-foot sand layer of the Old O-Field Permeable Infiltration Unit in August 1996, using teleoperated low-ground-pressure equipment.

FY97 Restoration Progress

The installation performed removal activities at five sites and upgraded the groundwater extraction system at the Old O-Field Site. The Army completed RODs for three study sites and investigation of and the final report on natural attenuation processes at the West Branch of Canal Creek. Early actions were removal of the Aberdeen Area Battery Disposal Site, the Aberdeen Area Chlordane SWMU, and the Edgewood Lewisite Sump and closeout of the Building 510 Drum Dump and the Rod and Gun Club Dump.

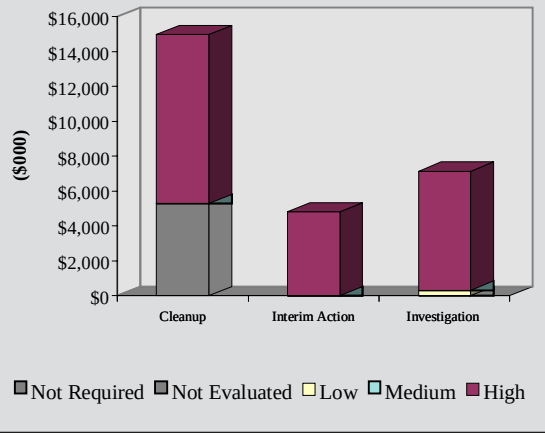
The installation implemented several innovative technologies, including hybrid poplar phytoremediation, vegetation gas flux chambers for measuring off-gassing of VOCs, honeybee biomonitoring, and the ballistic foam technology test for chemical rounds. Geoprobe, cesium vapor magnetometer, and Fourier transform infrared air-monitoring techniques also accelerated site characterization and fieldwork.

The first four activities in the current plan of action were scheduled for completion in FY97. They were delayed for the following reasons: the installation discovered an additional disposal area in new O-field; the RI/FS for Graces Quarters groundwater was delayed because of the discovery that a large plume had migrated to another aquifer; and needed stakeholder input for a community relations plan (CRP) and a site-specific removal plan was delayed.

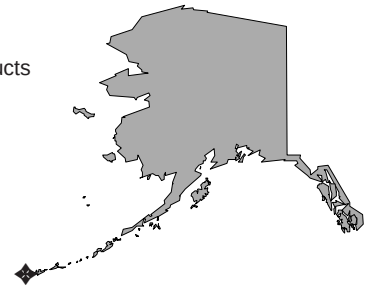
Plan of Action

- Sign ROD for one study site and complete Remedial Design in FY98
- Initiate RAs for J-Field, the Building 103 Cap and Cover System, and excavation of Building 503 Burn Sites in FY99
- Complete final RIs for Carroll Island (sitewide), Graces Quarters (groundwater), and the O-Field site in FY98
- Continue the J-Field phytoremediation study in FY00
- Complete site characterization, CRPs, and site-specific Lauderick Creek CWM removal plan in FY98
- Complete Focused Feasibility Studies for five projects in FY98

FY98 Funding by Phase and Relative Risk



Size: 76,800 acres
Mission: Provided services and materials to support aviation activities and operating forces of the Navy
HRS Score: 51.37; placed on NPL in May 1994
IAG Status: Federal Facility Agreement signed in November 1993
Contaminants: UXO, heavy metals, PCBs, VOCs, pesticides, and petroleum products
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $89.1 million
Estimated Cost to Completion (Completion Year): $70.6 million (FY2002)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2000



Adak, Alaska

Restoration Background

In September 1995, the BRAC Commission recommended closure of Adak Naval Air Facility. Operational Naval forces departed the island on April 1, 1997, and command functions were assumed by Engineering Field Activity Northwest. The installation closed in September 1997.

In FY86, an Initial Assessment Study identified 32 sites at the installation. Site types include landfills, unexploded ordnance (UXO) areas, and polychlorinated biphenyl (PCB) spill sites that have released contaminants into groundwater, soil, surface water, and sediment. Twenty sites were recommended for further investigation. Beginning in FY88, RCRA Facility Assessments were conducted that identified 76 solid waste management units (SWMU), 73 of which are being managed as CERCLA sites under the Federal Facility Agreement (FFA) signed in 1993.

From FY90 to FY95, Interim Actions were conducted at several sites. These actions involved disposal of PCB-contaminated water and sludge; bioremediation of 4,500 tons of petroleum-contaminated soil; and excavation, removal, and disposal of leaking incendiary (napalm) and cluster bombs. In addition, the installation has removed approximately 30 underground storage tanks and aboveground storage tanks and their associated pipelines. All petroleum-contaminated sites are being evaluated through the cooperative assessment and decision-making approach pursued by the Navy and the state of Alaska.

An Interim Record of Decision (ROD) was signed in FY95 for two landfills (SWMUs 11 and 13). Under this ROD, the Navy completed remediation activities at these sites in 1997. The activities consisted of installing an intrusive barrier of clean fill material at the sites, recontouring the sites to provide proper drainage, and revegetating the site.

The installation completed a community relations plan in early FY90 and revised the plan in FY95. In FY92, it formed a technical review committee, which was converted to a restoration advisory board (RAB) in January 1996. The RAB has been an active participant in the decision-making process since its inception.

During FY96, the installation completed fieldwork for the basewide Remedial Investigation and Feasibility Study (RI/FS) and completed final evaluation reports for 10 SWMUs. Removal Actions and Interim Remedial Actions also were completed for a number of SWMUs.

FY97 Restoration Progress

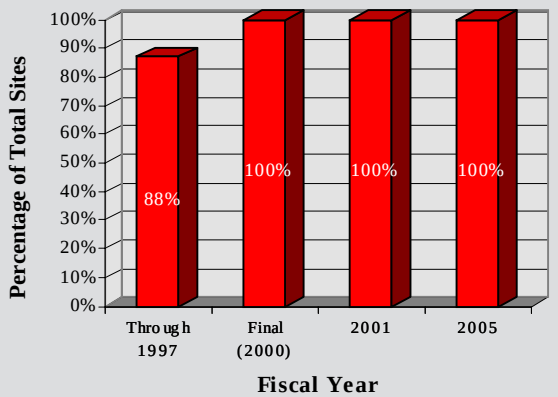
The installation completed a Tier Assessment to Risk Assessment (TARA) at petroleum sites and continued petroleum recovery activities at SWMU 17. Remedial Design (RD) work also was initiated for the areas surrounding SWMU 17. SWMUs 19 and 25 were closed, and a Non-Time-Critical Removal Action at SWMUs 16, 16A, and 67, as well as a Time-Critical Removal Action for drum removal at SWMU 27, were completed. UXO investigations and clearance for high-priority reuse areas continued, and corrective actions on abandoned landfill sites were completed. Use of geoprobe well installation has drastically accelerated the subsurface investigations for petroleum contamination.

As part of the community relations program under BRAC, a Local Redevelopment Authority and a BRAC cleanup team (BCT) have been established. The BCT includes representatives from the Navy, EPA, the state of Alaska, and the U.S. Fish and Wildlife Service. This team works in close partnership to arrive at consensus-based decisions on remediation requirements for sites on Adak. The BCT developed a draft BRAC Cleanup Plan, which was signed by representatives of the Navy, the state of Alaska, and EPA in FY97. Partnership with regulatory agencies and the state of Alaska was instrumental in development and review of the draft Reuse Plan. Monthly RAB meetings have provided input on virtually every aspect of environmental cleanup activities, including comments on the RI/FS and UXO Management Plan.

Plan of Action

- Initiate RD work and remediation for SWMU 4 (abandoned landfill) site in FY98
- Initiate RD for sediment remediation in Sweeper Creek estuary in FY98
- In FY98, continue biological assessment to determine the impact of contaminants on offshore marine ecosystem

Sites Achieving RIP or RC Per Fiscal Year



Size: 1,943 acres
Mission: Provided services and material support for transition of aircraft and tenant commands
HRS Score: NA
IAG Status: None
Contaminants: Asbestos, paint, solvents, petroleum/oil/lubricant liquids and sludges, and heavy metals
Media Affected: Groundwater and soil
Funding to Date: $25.5 million
Estimated Cost to Completion (Completion Year): $42.8 million (FY2005)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2001

Agana, Guam

Restoration Background

In July 1993, the BRAC Commission recommended that Agana Naval Air Station be closed. The station was closed on March 31, 1995.

In FY84, an Initial Assessment Study (IAS) identified two potentially contaminated sites. In FY93, a Preliminary Assessment (PA) identified an additional 13 potentially contaminated sites (later identified as points of interest [POI]). After the Environmental Baseline Survey (EBS) was completed in FY94, eight additional POIs were identified. In FY95, an update of the EBS identified six additional POIs, bringing the total number of sites identified to 29.

The final Site Inspection (SI) report, published in FY94, revealed the presence of contamination in soil and groundwater at the two sites identified in the original IAS. Because of the complex hydrogeology of the area, the installation initiated an aggressive groundwater investigation to characterize the groundwater regime beneath the base. In FY95, monitoring wells and pumps were installed. Initial heat pulse flow readings were collected, in addition to data from the monitoring wells, which indicated contamination by trichloroethene (TCE) and dichloroethane.

In FY94, fast-track actions were initiated for the investigation of soil contamination at 17 sites. In FY95, the installation completed an SI at 1 site and initiated SIs at 14 others.

The BRAC cleanup team (BCT) was established in FY93, and the BRAC Cleanup Plan was completed in FY94. A community relations plan was published in FY92, and three information repositories were established. The installation formed a restoration advisory board (RAB) in FY93, and a partnership agreement was reached with regulatory agencies in FY95.

In FY95, the Environmental Condition of Property assessment was completed; it identified four parcels considered suitable for reuse. Findings of suitability to lease were completed for three parcels. The installation completed one interim lease agreement and one joint use agreement with the Guam International Airport Authority.

The Local Redevelopment Authority, called the Komitea Para Tiyan, has submitted a revised reuse plan that addresses the requirements of the U.S. Department of Housing and Urban Development.

During FY96, the RAB and the BCT met quarterly. The BCT also conducted monthly teleconferences. A Removal Action was initiated at 1 site, and Remedial Investigation (RI) fieldwork was completed at 29 sites, 11 of which were recommended for no further action. To streamline and expedite the investigation, the BCT agreed that an EBS was to serve as the SI phase.

FY97 Restoration Progress

In FY97, all aboveground and underground storage tanks were permanently closed and removed. An Action Memorandum recommending no further action for eight sites was prepared, and a wellhead treatment system was installed. Technological initiatives included use of granular activated carbon for groundwater treatment, ground-penetrating radar for geophysical survey, and passive gas tubes for soil gas survey.

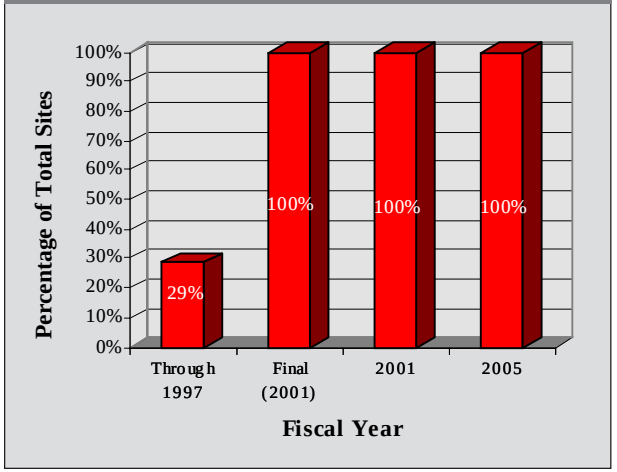
The RAB and BCT continued to meet quarterly. To reduce time in the field and to involve the BCT in all aspects of the investigation, the BCT reviewed intermediate field data. Documents were sent directly from the contractor to the regulators to lessen the time required before fieldwork began. Conference calls were used to resolve concerns. The RAB also has been involved in document review, training, advising the BCT, and project scope reviews.

Some activities scheduled for completion in FY97 were delayed because of funding constraints.

Plan of Action

- Prepare an Action Memorandum recommending no further action for six sites in FY98
- Conduct a limited dye trace study and complete the RI at Site 29 in FY98
- Prepare Engineering Evaluations and Cost Analyses for seven sites and conduct Removal Actions at five sites in FY98 and at two sites in FY00
- Conduct RIs at six sites in FY98
- In FY02, implement long-term monitoring at the on-site production well and begin the Feasibility Study at Site 29

Sites Achieving RIP or RC Per Fiscal Year



Air Force Plant No. 4 Lockheed Martin Tactical Aircraft Systems

NPL

Size: 602 acres
Mission: Manufacture aircraft and associated equipment
HRS Score: 39.92; placed on NPL in August 1990
IAG Status: IAG signed in 1990
Contaminants: Solvents, paint residues, spent process chemicals, PCBs, waste oils and fuels, heavy metals, VOCs, and cyanide
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $40.0 million
Estimated Cost to Completion (Completion Year): $35.4 million (FY2013)
Final Remedy in Place or Response Complete Date: FY2002

Fort Worth, Texas

Restoration Background

Air Force Plant No. 4 has served as a primary manufacturer of military aircraft and associated equipment since 1942. Since FY84, ongoing studies have identified 30 sites and confirmed groundwater, surface water, and soil contamination. Trichloroethene (TCE) has been detected in groundwater beneath six spill sites and four landfills. Groundwater is the primary drinking water source for the cities of White Settlement, Lake Worth, and Fort Worth.

A Remedial Investigation and Feasibility Study (RI/FS) began in FY88. During the RI, 8 of the 30 sites were recommended for no further action. The installation has initiated several Interim Remedial Actions (IRA). Two IRAs initiated in FY93 included the installation of an interim groundwater treatment system to address contamination from two spill sites. In FY94, the installation completed the design and construction of a soil vapor extraction (SVE) system at Building 181, the parts processing plant. Two additional carbon filtration groundwater treatment systems were installed to control the further migration of TCE. In FY95, the installation completed the RI/FS with the preparation of the Ecological Risk Assessment. The installation also began construction of a vacuum-enhanced pumping system to treat groundwater and soil contamination at Landfill No. 3. The installation undertook the expansion of several treatment systems associated with the large TCE plume. Additional extraction wells were installed at one pump-and-treat system to prevent TCE migration. The SVE pilot plant at Building 181 was expanded to a large-scale, dual-phase SVE system that will treat both groundwater and soil vapors.

To foster partnerships with the regulatory agencies, the installation conducts monthly meetings with representatives of EPA, the Texas Natural Resource Conservation Commission (TNRCC), the U.S. Army Corps of Engineers, the Air Force Center for Environmental Excellence (AFCEE), and the U.S. Geological Survey. These meetings facilitate communication and partnering on the installation's restoration progress and schedule. In FY96, a Record of Decision (ROD) was signed by TNRCC, the Air Force, and EPA. The ROD proposed actions at the remaining two sites, including groundwater pumping and treatment, enhanced pumping and treatment using surfactants, and SVE. Also in FY96, a Memorandum of Agreement was signed by the Air Staff, AFCEE, the Base Conversion Agency, and Headquarters Air Force to integrate the restoration programs for the Carswell Field sites and the Air Force Plant No. 4 groundwater plume.

In FY95, the installation converted its technical review committee to a restoration advisory board (RAB). In FY96, the RAB was integrated with the Carswell RAB, and meetings are now held quarterly at JRB Naval Air Station, Fort Worth.

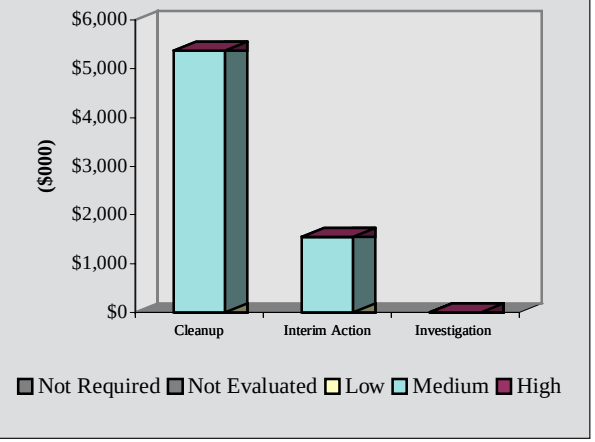
FY97 Restoration Progress

The installation completed a long-term monitoring plan and a Remedial Design (RD) work plan. The RAB sponsored an Earth Day fair to generate community interest. Regulatory review and the Federal Facility Agreement schedule delayed some actions that were scheduled for completion in FY97.

Plan of Action

- Fund final Remedial Actions (RA) in FY98
- Complete 30, 60, and 90 percent RD, in accordance with the Federal Facility Agreement in FY98
- Complete RD fieldwork and a RD Report in FY98
- Complete a RA Plan in FY99
- Install final RAs by FY00

FY98 Funding by Phase and Relative Risk



Air Force Plant No. 85 — Proposed NPL

Size: 420 acres
Mission: Produced aircraft and aircraft missile components
HRS Score: 50.00; proposed for NPL in January 1994
IAG Status: None
Contaminants: PCBs, petroleum hydrocarbons, VOCs, and metals
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $3.8 million
Estimated Cost to Completion (Completion Year): $0
Final Remedy in Place or Response Complete Date: FY2000

Columbus, Ohio

Restoration Background

Since FY86, ongoing environmental studies have identified 11 sites and 1 area of concern (AOC) at Air Force Plant No. 85. Historical operations at the installation involved use of solvents and petroleum products. Contaminants include polychlorinated biphenyls (PCB), metals, petroleum hydrocarbons, and volatile organic compounds (VOC) that have affected groundwater, surface water, sediment, and soil. To date, decision documents have been prepared for 9 of the 11 sites; however, the Air Force has not received concurrence from regulatory agencies on any of the documents.

In FY94, the installation conducted supplemental investigations of pesticide contamination at the fire training area. In FY95, the installation began a Removal Action to remove soil contaminated with PCBs. The installation was scheduled to be sold in February 1997. The sale documents include restrictions on soil, groundwater, and other land uses. In FY96, the installation began the process of transferring the property.

In FY95, the installation formed a restoration advisory board (RAB) and began an ongoing educational program for RAB members. In FY96, a RAB meeting was held to determine public interest levels. One option presented in this meeting was to disband the RAB because of a lack of public interest and replace it with occasional public information meetings.

Also during FY96, the installation initiated a groundwater and surface water investigation. The AOC was closed under a letter of concurrence from the Ohio EPA. The restoration of the fire training area was deferred, pending analysis of the results of groundwater investigation. There is a possibility that the site will be closed after a risk assessment is conducted. The installation continued the Removal Action to remove PCB-contaminated soil. The installation also began compiling a Relative Risk Site Evaluation Report and began fulfilling reporting requirements under CERCLA.

FY97 Restoration Progress

Fieldwork was completed for the groundwater and surface water investigation project. A provisional draft of the final report on this investigation was received in August 1997.

The Air Strategic Command (ASC) began using the state of Ohio's Voluntary Action Program rules, which were codified in FY97, to the fullest extent possible. This has resulted in resolution of issues with regulatory agencies and has expedited site characterization at AFP 85. A public meeting held in FY97 determined that the formation of a RAB was not necessary. The public and the installation agreed that information will be provided to the community informally as needed

Some activities scheduled for completion in FY97 were delayed. A contract has been awarded for the removal of the PCB-contaminated soil, and this Removal Action has been rescheduled for early FY98. Sale of the property and recovery of funds for remediation activities have been delayed as title transfer documents are prepared and reviewed. Concurrence from regulators on final closure of sites will occur on a rolling basis and should be completed for all sites by the end of FY00.

Plan of Action

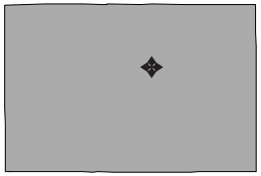
- In FY98, complete the Removal Action for soil contaminated with PCBs
- Complete the sale of the property in FY98
- Recover funds from sale for remediation activities in FY98
- Obtain concurrence from regulators for final closure of sites by FY00
- Continue to use the processes defined in the state of Ohio's Voluntary Action Program to the fullest extent possible
- Update community and provide information as needed

FY98 Funding by Phase and Relative Risk

Funding for FY98 is not planned at this installation.

Air Force Plant PJKS — NPL

Size: 464 acres
Mission: Research, develop, and assemble missiles and missile components; test engines
HRS Score: 42.93; placed on NPL in November 1989
IAG Status: None
Contaminants: Chlorinated organic solvents, VOCs, nitrate, fuel, and hydrazine
Media Affected: Groundwater and soil
Funding to Date: $19.8 million
Estimated Cost to Completion (Completion Year): $38.1 million (FY2014)
Final Remedy in Place or Response Complete Date: FY2009



Waterton, Colorado

Restoration Background

Air Force Plant PJKS supports the military by researching and developing and then assembling missiles, missile components, and engines. Historical operations have contaminated groundwater beneath the installation with trichloroethene (TCE), hydrazine, vinyl chloride, benzene, other volatile organic compounds (VOC), and nitrate.

Since FY86, ongoing environmental studies have identified a total of 59 sites, which were grouped into six operable units (OU). There are also six areas of concern. Twelve of 14 underground storage tanks have been removed from the installation.

In FY93, field activities began for a supplemental Remedial Investigation and Feasibility Study (RI/FS) at OU1, OU4, and OU6. In addition, RI/FS work plans have been completed for supplemental investigations at OU2, OU3, and OU5.

In FY94, the installation began using new technologies to improve field methods and data management. An electronic field data management module was used to ensure the efficient collection of high-quality analytical data. The installation also used a shallow seismic reflection device to investigate geophysical characteristics in the top portion of subsoil at various sites.

In FY94, the installation sponsored workshops to ensure that all technical and regulatory requirements for the supplemental RI/FS would be met. The workshops were attended by both technical and regulatory agency specialists and included representatives from EPA and the state. As a result of the workshops, work plans for supplemental RI/FS activities at OU2, OU3, and OU5 were renewed, approved, and made final.

In FY95, all fieldwork, sample collection, and sample analysis for the supplemental basewide RI/FS and construction of the monitoring well network were completed. During FY96, a restoration advisory board (RAB) was established. Five meetings were held, and one of the meetings included a site tour.

In FY96, work continued in support of the basewide RI. Data validation was completed, and an electronic database was established. Technical work groups were formed with the EPA, the state of Colorado, USGS, and U.S. Army Corps of Engineers to support the RI site characterization and risk assessment efforts. Site characterization and a Baseline Risk Assessment were initiated.

Also in FY96, negotiations of the Interagency Agreement (IAG) were initiated. After a delay concerning the use of Defense and State Memorandum of Agreement (DSMOA) funding to support Colorado's participation, Colorado agreed to continue with efforts to negotiate an IAG and began work on a draft agreement with EPA.

FY97 Restoration Progress

The installation signed a RAB charter in early FY97 and reevaluated and revised the Relative Risk Site Evaluations to reflect data from the RI/FS. The Air Force is in the process of divesting the installation. During FY97, the Air Strategic Command (ASC) and Lockheed Martin Astronautics (LMA) agreed to sale terms for the installation. The sale terms include environmental liability and cleanup aspects. LMA will be offering its environmental expertise and exisiting infrastructure as a management partner in the cleanup process.

The installation worked with the technical group formed in FY96. The group, which consists of ASC, EPA Region 8, and the state of Colorado, completed a preliminary risk assessment for one site. A method was developed for focusing on remaining regulatory concerns and for setting a precedent for future risk assessments.

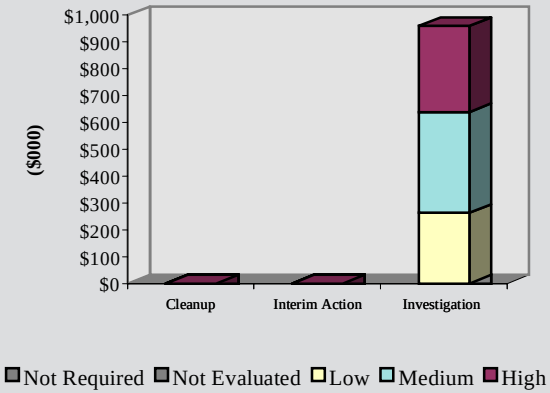
The installation held quarterly RAB meetings to discuss preliminary site characterization data, health assessments, risk assessments, and general community concerns.

IAG negotiations were suspended in late FY96 and early FY97 and have recently been restarted. The RIs scheduled for completion in FY97 should be completed in FY98. FS and Record of Decision (ROD) development, however, are expected to continue into 2001.

Plan of Action

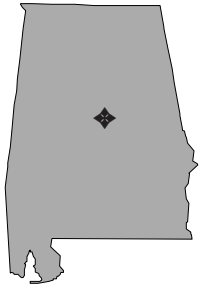
- Complete and sign an IAG in FY98
- Evaluate the potential for early actions and acceleration of cleanup in FY98
- Assess the cost-effectiveness of early cleanup actions in FY98
- Form formal partnership with the state of Colorado and EPA Region 8 in FY98
- Build budget with ASC in FY99 to plan implementation of early actions in FY99
- Complete all basewide RI/FS work for OUs 1 through 6 in FY99, and submit one final RI/FS report that will include all six OUs
- Sign RODs as needed; sign an installationwide ROD in early FY01

FY98 Funding by Phase and Relative Risk



Alabama Army Ammunition Plant

Size: 2,209 acres
Mission: Manufactured explosives
HRS Score: 36.83; placed on NPL in July 1987
IAG Status: Federal Facility Agreement signed in December 1989
Contaminants: Nitroaromatic compounds, heavy metals, and munitions-related wastes
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $53.8 million
Estimated Cost to Completion (Completion Year): $5.9 million (FY2001)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2001



Childersburg, Alabama

Restoration Background

Environmental studies conducted since FY83 at the Alabama Army Ammunition Plant have identified various sites as potential sources of contaminants. Prominent site types include a former ammunition production and burning ground for various explosives; industrial wastewater conveyance systems, ditches, and a red water storage basin; landfills; underground storage tanks; polychlorinated biphenyl (PCB)–containing transformers; and a former coke oven.

Remedial Investigation and Feasibility Study (RI/FS) activities, beginning in FY85, are ongoing. The installation was divided into five operable units (OU): Area A OUs 1 and 2 and Area B OUs 1, 2, and 3. The RI confirmed that groundwater, surface water, sediments, and soil are contaminated with nitroaromatic compounds, heavy metals, and explosives wastes.

In FY88, the Army excavated approximately 25,000 cubic yards of contaminated soil from the burning grounds at Area A and transported the soil to Area B to await a final decision on treatment or disposal. In FY90, the Army and regulators signed the Record of Decision (ROD) for Area B. It incorporated a generic remedy, including on-site incineration of stockpiled contaminated soil.

In FY94, the Army initiated a follow-on installationwide RI. The RI included installing monitoring wells and conducting soil borings; resampling existing monitoring wells; and collecting background samples, soil and sediment samples, surface-water samples, and ecological samples. Also in FY94, the Army completed incineration of the stockpiled contaminated soil, as prescribed in the ROD, and formed a BRAC cleanup team (BCT).

In FY95, the Army attempted to establish a restoration advisory board (RAB) but received no applications for RAB membership. Also in FY95, the Army and regulators approved the Area A RI/FS.

The Army initiated partnership efforts with EPA and the state regulatory agency. These efforts resulted in concurrence on the CERFA Report and signing of four Interim RODs. Partnership meetings also produced an Installation Management Plan, which establishes the course of action for installation cleanup through FY99.

In FY96, the Army completed a Proposed Plan and a final ROD for Area A. The installation identified an additional OU for Area B (OU4), which included all remaining lead- and explosives-contaminated soil at the plant. An Interim ROD was initiated for Area B OU4, including soil removal, incineration of explosives-contaminated soil, and solidification of lead-contaminated soil.

FY97 Restoration Progress

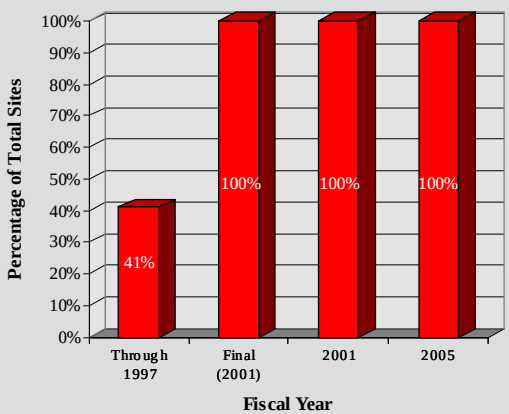
The Army and regulators approved the final ROD for Area A and completed the Remedial Action. Additional fieldwork is necessary to complete goals for Area B. The BCT conducted quarterly meetings and began delisting procedures for Area A. Approval for designation of 1,285 acres as CERFA-uncontaminated was granted by the appropriate regulatory agencies.

Some activities scheduled for completion in FY97 were delayed because additional fieldwork was needed in Area B.

Plan of Action

- In FY98–FY99, complete the follow-on groundwater investigations at Area B required for the RI/FS
- Complete a Proposed Plan and a ROD for Area B in FY98–FY99

Sites Achieving RIP or RC Per Fiscal Year



Size: 2,639 acres, including about 1,000 offshore acres
Mission: Maintain and operate facilities and provide services and material support for Naval aviation activities and operating forces
HRS Score: NA
IAG Status: Federal Facility Site Remediation Agreement under negotiation
Contaminants: Acetone, BTEX, chlorinated solvents, cyanide, heavy metals, herbicides, pesticides, methylene chloride, petroleum hydrocarbons, PAHs, PCBs, VOCs, and SVOCs
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $68.3 million
Estimated Cost to Completion (Completion Year): $149.5 million (FY2005)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2004

Alameda, California

Restoration Background

In September 1993, the BRAC Commission recommended closure of Alameda Naval Air Station. The installation was closed in April 1997.

Environmental cleanup activities at this installation are being conducted at 24 sites. Prominent site types at the installation include landfills, offshore sediment areas, plating and painting shops, pesticide control areas, transformer storage areas, and a former oil refinery.

In FY94, the installation completed an Interim Remedial Action (IRA) under which lead- and acid-contaminated soil was removed from Site 13. During FY95, four underground storage tanks (UST) and associated contaminated soil were removed at Site 7. A Time-Critical Removal Action to remove debris from catch basins was initiated at Site 18. Sixty abandoned tanks and associated contaminated soil were removed as part of the UST program.

The installation initiated a bench-scale demonstration at Site 5 for removal of metals from soil by electrokinetics. The installation completed Phase I of an Environmental Baseline Survey (EBS) for all sites in FY94 and Phase I of an Ecological Risk Assessment for all sites in FY95.

The installation formed a technical review committee in FY90 and converted it to a restoration advisory board (RAB) in FY93. The RAB, which has 32 members, meets monthly. The installation completed a community relations plan (CRP) and established an administrative record in FY89. The administrative record was updated in FY96. Two information repositories also were established.

A BRAC cleanup team was formed in FY93. A BRAC Cleanup Plan (BCP) was completed in FY94 and is updated annually. The Navy worked to promote the use of innovative technologies by establishing an innovative partnering contract with the University of California, Berkeley.

The installation will be completing a Remedial Investigation and Feasibility Study (RI/FS) for 24 sites. The installation also is conducting a Removal Action for contaminated soil at Site 15 and a Removal Action to remove PCB- and lead-contaminated soil at Site 16.

At Site 5, a pilot-scale demonstration of electrokinetics for removal of metal from soil continues. The installation also initiated Treatability Studies at Sites 1, 2, 3, 13, and 17 to evaluate the use of innovative technologies. A community land reuse plan was approved in FY96.

FY97 Restoration Progress

The installation initiated Phase II of the Ecological Risk Assessment for all sites. In addition, the EBS was completed for all of the 208 parcels with Environmental Condition of Property (ECP) assigned. EBS sampling and risk screening were conducted, and ECP recategorization was implemented. A Time-Critical Removal Action to remove sediments from storm sewer lines was completed at Site 18. A finding of suitability to lease (FOSL) was completed for the entire base (100 percent of the property) before base closure in April 1997. An Engineering Evaluation and Cost Analysis (EE/CA) was completed for Site 16. Treatability Studies were completed for Sites 3 and 13.

The final revised CRP and revised BCP were completed. Early actions took place at sites:15, 16, and 18. Many innovative technologies were implemented, including electrokinetics, funnel and gate, acoustic imaging, intrinsic bioremediation, resolution resources, and three-dimensional seismic imaging. To accelerate fieldwork and analysis, techniques such as the Site Characterization and Analysis Penetrometer System (SCAPS), ground-penetrating radar, on-site (mobile) laboratories, and direct push profiler were used.

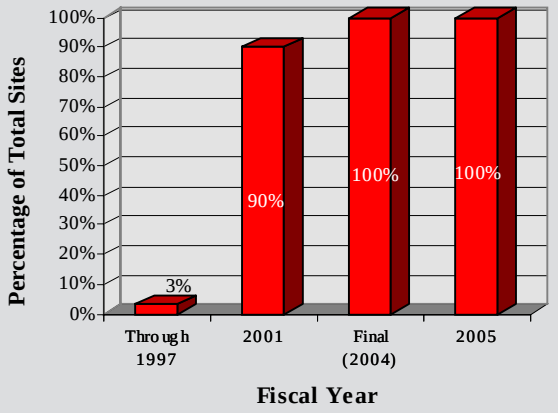
In FY97, operable units (OU) were restructured to allow no-further-action sites to be disposed of earlier. This lowered the projected cost to complete and increased focus on the most significant sites.

Some activities scheduled for completion in FY97 were delayed because risk-based corrective action (RBCA) evaluation indicated that Removal Actions might not be necessary.

Plan of Action

- Complete Removal Action at Site 18 in FY98
- Complete Treatability Studies at Sites 1, 2, and 17 in FY98
- Complete the demonstration of electrokinetics at Site 5 in FY98
- Initiate the final phase of the Ecological Risk Assessment for all sites in FY98
- Complete the recategorization of parcels in FY98
- Complete the RI for OU 1 in FY98
- Complete RI for OUs 2 and 3 in FY99
- Initiate Remedial Design (RD) for Sites 5 and 10 in FY99
- Complete the FS and sign the Record of Decision (ROD) for one OU in FY98
- Sign the ROD and initiate RD and Remedial Action for all sites in FY98
- Complete Removal Actions at Sites 7, 14, and 22 in FY98

Sites Achieving RIP or RC Per Fiscal Year



Albany Marine Corps Logistics Base NPL

Size: 3,579 acres
Mission: Acquire, supply, and dispose of materials needed to sustain combat readiness of Marine Corps forces worldwide; acquire, maintain, repair, rebuild, distribute, and store supplies and equipment; conduct training
HRS Score: 44.65; placed on NPL in December 1989
IAG Status: Federal Facility Agreement signed in July 1991
Contaminants: VOCs, PCBs, heavy metals, pesticides, and PAHs
Media Affected: Groundwater, soil, and sediment
Funding to Date: $25.8 million
Estimated Cost to Completion (Completion Year): $6.1 million (FY2016)
Final Remedy in Place or Response Complete Date: FY2001

Albany, Georgia

Restoration Background

Since FY85, environmental studies have identified 29 sites (23 under CERCLA and 6 under RCRA) at the Albany Marine Corps Logistics Base. The sites at the installation were grouped into six operable units (OU), including a basewide groundwater OU (OU6) and a site screening group. Prominent site types include disposal areas, storage areas, and landfills. Primary contaminants include trichloroethene, polychlorinated biphenyls (PCB), and heavy metals.

An Initial Assessment Study was completed for eight sites in FY85. In FY87, a confirmation study was completed for nine sites, a groundwater recovery system was installed, and a quarterly groundwater monitoring program was initiated for the Industrial Wastewater Treatment Plant (IWTP) area. During FY89, RCRA Facility Investigation (RFI) activities were completed for nine sites. The installation also completed a corrective measures study (CMS) for one site and an Interim Remedial Action (IRA) for capping the IWTP sludge beds.

In FY90, the state of Georgia issued an administrative order to complete RCRA closure of the sludge beds at the Domestic Wastewater Treatment Plant (DWTP). In FY91, a Preliminary Assessment was completed for one site. In FY92, a Remedial Investigation and Feasibility Study (RI/FS) was completed and an Interim Record of Decision (ROD) was signed for both sites at OU3.

In FY93, the Remedial Design (RD) was completed for both sites at OU3, and in FY94, OU3 Removal Actions and cleanup activities were completed. An RI/FS work plan was completed, and fieldwork was initiated for all five sites at OU4. The installation also completed final Remedial Action (RA) for the removal of soil from the DWTP sludge beds at solid waste management unit (SWMU) 3.

During FY95, the RI/FS for all four sites at OU1 was submitted to the regulators. An IRA was completed for one site at OU1. The RI/FS for OU2 was submitted and an Engineering Evaluation and Cost Analysis was completed for one site at OU4. In addition, the installation completed a focused FS, signed an Interim ROD, and completed the RD for one site at OU5. The installation also completed RCRA closure of the DWTP sludge beds at SWMU 3.

A technical review committee (TRC) was formed in FY89 and meets periodically. Because community interest has been insufficient, the TRC will not be converted to a restoration advisory board. In FY92, a community relations plan was completed, and an information repository and an administrative record were established.

During FY96, the installation completed the construction of a pilot-scale groundwater treatment system and initiated a Treatability Study for one site at OU1. During the same period, the installation completed a Removal Action for another site at OU1. A final ROD for no further action was signed for OU2, and the site was closed. An IRA was completed for one site at OU5. Three RFIs, three CMSs, and one RI/FS were in progress at the end of FY96.

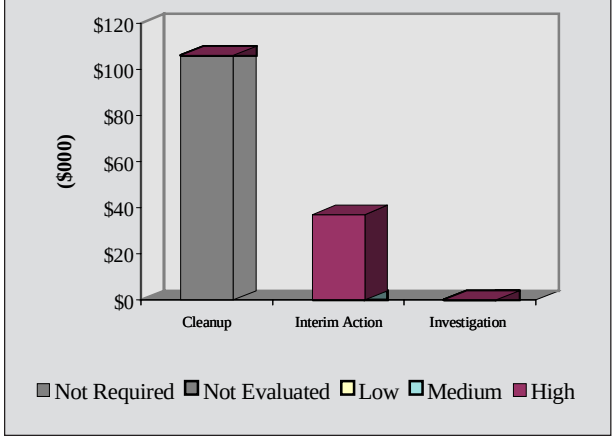
FY97 Restoration Progress

The installation completed the Remedial Investigation/Baseline Risk Assessment (RI/BRA) and RI/BRA addendum and signed a final ROD for four sites at OU1. Two sites required no further action, and two sites required implementation of institutional controls. Also, a final ROD was signed for two sites at OU3: one site received a no further remedial action planned (NFRAP) designation and one site required implementation of institutional controls. Progress on the RI/BRA at OU4 and OU6 continued. The PSC Screening Technical Memorandum was completed for nine sites, seven of which will be listed as NFRAP in the RCRA Permit. Two of the screening sites (4, 21) will require further action. The RI/BRA and the NFRAP Proposed Plan for two sites at OU5 were completed. In addition, the RFI and the CMS for two SWMUs and corrective measures implementation were finished. Removal Actions were conducted for two sites, which will be listed as NFRAP in the RCRA permit.

Plan of Action

- Complete RI/BRA and decision documents for five sites at OU4 in FY98
- Complete a no-further-action ROD for two sites at OU5 in FY98
- Continue progress on OU6 basewide groundwater technical documents and Data Quality Objectives and RI/BRA in FY98
- Complete the investigation and decision documents for the remaining screening sites in FY98

FY98 Funding by Phase and Relative Risk



Allegany Ballistics Laboratory NPL

Size: 1,628 acres (1,572 acres owned by the Navy)
Mission: Research, develop, and produce solid propellant rocket motors for DoD and NASA
HRS Score: 50.00; placed on NPL in May 1994
IAG Status: Federal Facility Agreement under negotiation
Contaminants: VOCs, RDX, HMX, and silver
Media Affected: Groundwater and soil
Funding to Date: $11.4 million
Estimated Cost to Completion (Completion Year): $60.0 million (FY2033)
Final Remedy in Place or Response Complete Date: FY2013

Mineral County, West Virginia

Restoration Background

Environmental studies initiated in FY83 identified 11 sites at this government-owned, contractor-operated installation. A confirmation study completed in FY86 recommended further study at eight of these sites. Remedial Investigation and Feasibility Study (RI/FS) activities began for six sites in FY92. Site 1, an immediate concern, consists of six waste disposal units, including ordnance burning grounds, inactive solvent and acid pits, a drum storage area, a former open-burn area, and an ash landfill.

In FY93, a RCRA Facility Assessment identified 119 solid waste management units (SWMU) and 12 areas of concern (AOC). Further action was recommended at 61 of the SWMUs and AOCs. In FY94, Site 7, a beryllium landfill, was excavated. Also in FY94, the installation began to negotiate waste disposal options with the state of West Virginia and EPA Region 3. In addition, the Agency for Toxic Substances and Disease Registry completed a Public Health Assessment of the installation.

During FY95, the installation began sampling off-site residential wells. It also completed the Focused Remedial Investigation (RI) for Site 1 and initiated a Phase I RCRA Facility Investigation (RFI) for the SWMUs and AOCs. Baseline Risk Assessments were completed for Sites 1 through 5 and Site 10.

The installation established a technical review committee in FY89 and converted it to a restoration advisory board (RAB) in FY95. The RAB, which has 25 members, reviews technical documents, presents its views to the community, and communicates the progress of the cleanup program. In FY94, a community relations plan was completed, and an administrative record and two information repositories were established.

During FY96, the installation completed the Focused Feasibility Study (FFS) for groundwater, initiated an FFS for soil, and initiated groundwater Remedial Design (RD) for Site 1. The installation also completed the FFS and initiated the RD for landfill contents and soil at Site 5. For Site 7, all excavated material was segregated and removal of contaminated soil was initiated. Negotiation of waste disposal options continued with the state of West Virginia and EPA Region 3. The installation also completed an Engineering Evaluation and Cost Analysis for Site 7; initiated an FFS for Site 10; continued the Phase I RFI activities for the SWMUs and AOCs; and completed a Site Inspection and initiated an RI/FS for Site 11.

FY97 Restoration Progress

The Record of Decision (ROD) for Site 1 was signed, and the RD for a WTP was implemented to obtain hydraulic containment. Remedial Action (RA) was initiated for groundwater at Site 1. A ROD was signed, and the FFS for Site 5 was completed. An RD was implemented for a landfill cap to prevent leaching of contaminants. Negotiation of waste disposal options was concluded and the Removal Action for Site 7 was completed. Three-dimensional seismic survey validation was used to accelerate fieldwork. Eight SWMUs were cleaned under a voluntary action to expedite closure and accommodate facility construction.

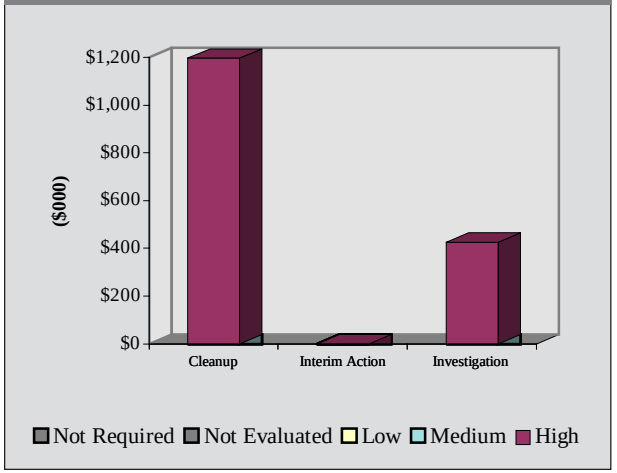
Partnering efforts have allowed documents to be reviewed and decisions to be made during meetings and via correspondence. Technical meetings have been scheduled with regulators to present cases for variances to state regulations. The RAB is very involved with the environmental issues and participates in activities such as site tours and document reviews. Local contractors and suppliers are used for a large portion of the restoration work in order to boost the local economy.

Remedial efforts related to Site 5 groundwater (which were scheduled to begin in FY97) will be addressed only if monitoring indicates they are necessary. Other FY97 actions that were not completed on schedule were delayed to allow proper regulatory coordination.

Plan of Action

- Initiate and complete the RA for the landfill in FY98
- Complete an FFS and initiate the RD for Site 10 in FY98
- Complete the Phase I RFI for SWMUs and AOCs in FY98
- Sign the ROD, initiate the RD, and complete the RI/FS for Site 11 in FY98
- Initiate an RA for soil and groundwater for Site 10 in FY99
- Initiate the RD for soil at Site 1 in FY00

FY98 Funding by Phase and Relative Risk



Andersen Air Force Base

NPL

Size: 15,400 acres
Mission: Support the Air Force mission in the Pacific by providing troops, equipment, and facilities
HRS Score: 50.00; placed on NPL in October 1992
IAG Status: Federal Facility Agreement signed in March 1993
Contaminants: VOCs, metals, asphalt, and UXO
Media Affected: Groundwater and soil
Funding to Date: $52.9 million
Estimated Cost to Completion (Completion Year): $70.8 million (FY2005)
Final Remedy in Place or Response Complete Date: FY2005

Yigo, Guam

Restoration Background

In FY84 and FY85, Preliminary Assessments identified 50 sites at Andersen Air Force Base, including landfills, waste piles, fire training areas, hazardous waste storage areas, and spill sites. The 50 sites were consolidated into 39 sites and grouped into 6 operable units (OU). Restoration activities were begun when low levels of trichloroethene (TCE) and tetrachloroethene (PCE) were detected in the sole-source drinking water aquifer on the island.

Increased ecological concerns have made restoration activities at the installation more complex. Rapid commercial development of nonmilitary lands on the island has made the base a de facto nature preserve. Various threatened and endangered species may inhabit areas of the installation. The federal Endangered Species Act requires extensive ecological inventories before any field activities can be conducted within an identified habitat of endangered species.

Landfill 5 was capped in FY93. To avoid the high cost of importing sterilized soil to Guam, the installation used a synthetic cover material to cap the landfill. The installation's demonstrated success with that innovative technology has prompted other agencies on Guam to use the same synthetic material. Remedial Investigation and Feasibility Study (RI/FS) activities also began in FY93.

Thirty-five monitoring wells have been installed at the installation. Groundwater sampling continued, including sampling of the production wells on and off Air Force property.

The installation formed a technical review committee (TRC) in FY93 and built a partnership with the Navy to establish a Defense Environmental Restoration Team. The TRC was converted to a restoration advisory board (RAB) in February 1995. The installation also fostered good communication with the neighboring villages of Yigo, Dededo, and Mangilao to disseminate information on potential contamination problems and restoration activities at the base.

In FY96, 25 additional groundwater monitoring wells were installed to facilitate initial quarterly RI sampling and later long-term monitoring (LTM) of groundwater located in the underlying karst aquifer. Field activities included groundwater and soil sampling and analysis, soil gas survey, geophysical survey, and site inventories. After receiving data from groundwater sampling, the installation reevaluated relative risk at several sites and reprioritized efforts.

FY97 Restoration Progress

The installation completed soil sampling and analysis, soil gas surveys, geophysical surveys, and site inventories for five sites. A gas chromatography/mass spectrometry lab was employed to analyze soil gas samples on site and accelerate fieldwork. The base was geographically reorganized into four OUs to accommodate excess-land issues and address groundwater at each site. The installation also performed risk site evaluations. An air stripping tower was constructed near a base booster station to treat Air Force potable water sources for volatile organic compounds (VOC).

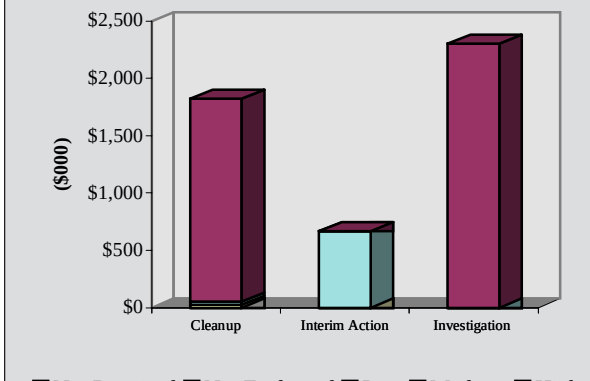
Community and regulatory agency partnering continued through RAB efforts, including participating with the Natural Resources Conservation Service in a watershed committee in order to include Air Force information and working with the local university to provide drilling and site data that facilitate the design of a groundwater model.

Completion of the Records of Decision (ROD) that were scheduled for FY97 will follow the public comment period. Some sites that were originally scheduled for Remedial Design (RD) work will be handled as Interim Remedial Actions (IRA) instead. LTM will not start until FY98.

Plan of Action

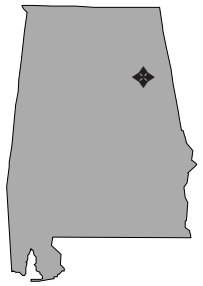
- Implement IRAs and LTM of groundwater for 15 sites in FY98
- Proceed with cleanup of excess lands in FY98
- Complete RODs for six sites in FY98
- In FY98, process peer review waivers to employ presumptive remedies such as excavation and transport/treatment off-island, recycling of asphaltic tar, and intrinsic remediation
- Foster continuous partnership with Guam EPA and EPA Region 9 remedial project manager in FY98
- Expedite release of excess land parcels by completing cleanup of Environmental Baseline Survey of areas of concern in FY98
- Continue LTM of groundwater in FY98

FY98 Funding by Phase and Relative Risk



Anniston Army Depot — Southeast Industrial Area — NPL

Size: 600 acres
Mission: Maintain combat vehicles
HRS Score: 51.91; placed on NPL in March 1989
IAG Status: IAG signed in June 1990
Contaminants: VOCs, heavy metals, phenols, petroleum products, acids, and caustics
Media Affected: Groundwater and soil
Funding to Date: $31.4 million
Estimated Cost to Completion (Completion Year): $128.3 million (FY2032)
Final Remedy in Place and Response Complete Date: FY2005



Anniston, Alabama

Restoration Background

Since 1948, the Army has repaired, rebuilt, and modified combat vehicles and artillery equipment at the Anniston Army Depot Southeast Industrial Area. Painting, degreasing, and plating operations at the installation generate wastes containing volatile organic compounds (VOC), phenols, heavy metals, and petroleum distillates. Environmental studies have revealed soil and groundwater contamination at 44 sites, most prominently with VOCs, metals, and phenols.

During closure activities in FY79, the Army pumped 2 million gallons of waste from an unlined lagoon into a lined lagoon. Later, Interim Remedial Actions (IRA) at RCRA Corrective Action sites resulted in the removal of 62,000 tons of sludge and contaminated soil.

From FY87 to FY89, the installation executed four IRAs, installing groundwater interception and treatment systems that use air stripping and carbon adsorption to remove VOCs and phenols.

In FY93, the installation conducted an emergency Removal Action to remove 82,200 pounds of sludge contaminated with VOCs, metals, and petroleum products from a former industrial wastewater treatment plant. The Army installed a large-diameter experimental well in FY94 to enhance groundwater recovery.

In FY95, the installation removed two underground storage tanks (UST) and included the associated contaminated groundwater in the existing groundwater operable unit (OU). The Phase I Remedial Investigation (RI) was completed and the Phase II RI and Feasibility Study (FS) activities began. Those activities included investigative activities at the industrial wastewater sewers. Under an Interim Record of Decision (ROD), the installation also began a pilot study to address problems with chemical fouling in the groundwater extraction system.

An Emergency Response Plan was developed to identify further response actions at public water-supply sites and residential wells that might be affected by activities at the installation. The installation addressed concerns of the local community by sampling residential groundwater wells.

In FY96, the commander solicited responses concerning interest in forming a restoration advisory board (RAB) but received few responses. The installation completed a source delineation at solid waste management unit (SWMU) 12, and the Army completed fieldwork for Phase II of the RI/FS.

FY97 Restoration Progress

The installation completed dye-tracing work at OU3, the off-post OU. The monitoring well inventory was completed. A Phase I RI began at SWMUs 10 and 11 and the TNT Washout Facility and leaching beds in the Ammunition Storage Area. A partnership initiative began that involved all members of the restoration process, including federal and state regulators, contractors, and members of the installation. The installation also held two technical review committee (TRC) meetings and a public availability meeting.

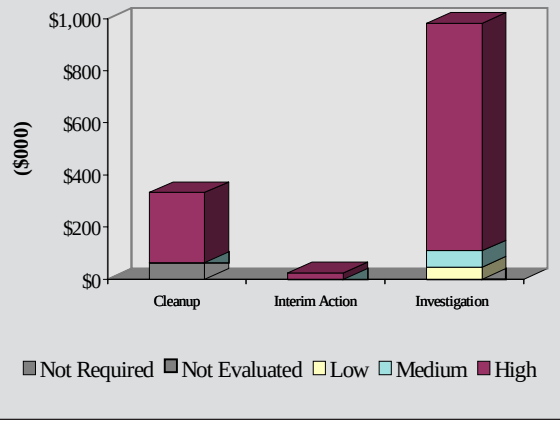
The installation used accelerated fieldwork techniques to expedite the cleanup process. New technologies included an innovative in situ technology for remediating VOC-contaminated soil; a geoprobe for monitoring the Emergency Removal Action; Field Test Kits to help assess SWMUs 10 and 11; and ground-penetrating radar to help identify the material in the subsurface along the depot boundary.

Some activities scheduled for completion in FY97 were delayed because an ecological risk assessment for the Phase II RI is being revised to accommodate the latest guidance and because the feasibility study for the groundwater part recently got under way.

Plan of Action

- Complete the emergency Removal Action at SWMU 12 in FY98 using peroxide injection
- Complete Phase II of the RI and begin the FS at the Southeast Industrial Area in FY98
- Complete the fieldwork Ammunition Storage Area RI in FY98
- Complete additional geophysical work on the depot boundary in FY98 to support off-post RI
- Complete preliminary ecological screening for the off-post RI in FY98
- Solicit public interest in establishing a RAB in FY98
- Complete Proposed Plan and ROD for the Southeast Industrial Area in FY99
- Complete ROD for the Ammunition Storage Area in FY00
- Complete Remedial Design in FY00 and Remedial Action in FY01 for the Southeast Industrial Area
- Complete ROD for the off-post RI in FY03

FY98 Funding by Phase and Relative Risk



Size: 6,500 acres
Mission: House the Army Armaments Research, Development, and Engineering Command
HRS Score: 42.92; placed on NPL in February 1990
IAG Status: IAG signed in July 1991
Contaminants: VOCs, explosives, and heavy metals
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $64.6 million
Estimated Cost to Completion (Completion Year): $70.4 million (FY2009)
Final Remedy in Place or Response Complete Date: FY2009

Rockaway Township, New Jersey

Restoration Background

In 1880, Dover Powder Depot, now known as Picatinny Arsenal, was established to store the gunpowder needed to manufacture ammunition. From 1898 to the early 1970s, explosives, propellants, and ammunition were manufactured at the installation. The installation now houses the Army Research, Development, and Engineering Command.

Regulators performed a Preliminary Assessment and Site Inspection in FY87. In FY91, the installation developed a Remedial Investigation Concept Plan which identified 156 sites. Prominent site types include a burning ground, landfills, underground storage tanks (UST), former production areas, and former testing sites. Releases of volatile organic compounds (VOC), explosives, and heavy metals from these sites have contaminated groundwater, surface water, sediment, and soil.

Formal Remedial Investigation and Feasibility Study (RI/FS) activities under the Interagency Agreement (IAG) with EPA began in FY91. The RI/FS approach divided the sites into 16 areas, prioritized the areas, and organized the investigation in three phases. The installation conducted an additional RI for the burning ground in FY94. Interim Actions included removing USTs, installing a groundwater extraction and treatment system, and removing drums from a landfill.

In FY95, the installation conducted several Interim Actions, including cleanup of lead-contaminated soil, operation of a groundwater pump-and-treat system for an on-site trichloroethene (TCE) plume, and installation of a drinking-water line to 12 nearby residences. The FS for the Burning Ground and the Phase I draft RI Report were submitted to the regulatory agencies. The installation also began Phase II RI activities.

In FY96, the technical review committee (TRC), which was formed in FY91, was converted into a restoration advisory board (RAB). The RAB includes representatives of neighboring communities, local organizations, labor unions, and the residents of Picatinny.

Also in FY96, EPA approved the Phase II RI work plan. The Army collected data from 77 sites to determine the relative risk category. It approved site investigation work plans for fast-track collection of relative risk data for 37 sites. RI activities continued throughout the installation. Use of an on-site analytical laboratory provided significant time and cost savings during RI.

The Army Corps of Engineers, Baltimore District, awarded a Total Environmental Restoration Contract (TERC) and is using Picatinny Arsenal as the anchor site for the contract. Work plans were fast-tracked through use of biweekly meetings. These efforts also accelerated initiation of Treatability Studies and implementation of other actions.

FY97 Restoration Progress

Regulators approved the Phase I RIs. The Army completed RI fieldwork, the draft Phase II Report, and relative risk scoring of all sites. In addition, the installation began an assessment of natural attenuation as an alternative for remediation of groundwater plumes in Area D. An air quality survey also was conducted to evaluate whether TCE had migrated into local residential basements.

The installation commissioned the United States Geological Survey (USGS) to conduct studies in support of natural attenuation of the TCE plume in Area D. The installation also began work with the Environmental Technologies Group in Picatinny to evaluate the effectiveness of phytoremediation for metal contamination at the Burning Ground Site.

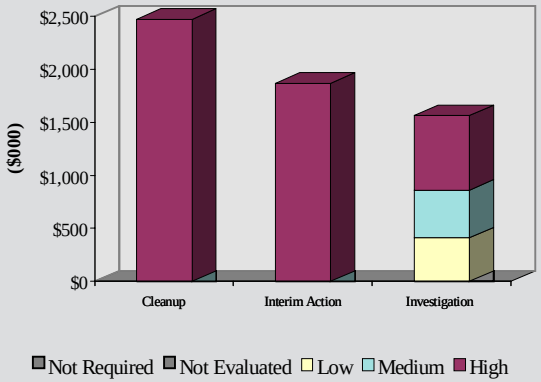
The U.S. Army Corps of Engineers awarded over $12 million in contracts for FY97. Over $7 million is earmarked for the Removal Action at three sites, including the pyrorange, Bear Swamp Brook Sediment Basin, and a landfill behind the arsenal burning grounds. The award also includes capping of the Post Farm Landfill.

The activities in the first bullet in the current plan of action were scheduled for completion in FY97. They were delayed because of late contract awards.

Plan of Action

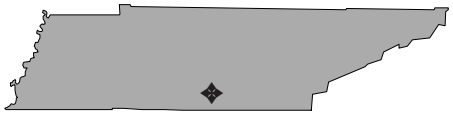
- Obtain approval of Burning Ground FS, conduct three Removal Actions, and initiate Proposed Plan and Record of Decision in FY98
- By FY98, obtain no-further-action decisions on appropriate sites based on nonresidential cleanup standards
- Work with regulators to accomplish incremental stages of FSs and other regulatory requirements by FY98
- Complete Remedial Design for Sanitary Landfill in southern part of Arsenal in FY98
- Complete Relative Risk Site Evaluation at the two remaining sites in FY98
- Install cap at the Post Farm Landfill with New Jersey Department of Environmental Protection and EPA in FY99

FY98 Funding by Phase and Relative Risk



Arnold Engineering Development Center — Proposed NPL

Size: 40,000 acres
Mission: Simulate flight conditions
HRS Score: 50.00; proposed for NPL in August 1994
IAG Status: None
Contaminants: VOCs, PCBs, heavy metals, acids, petroleum hydrocarbons, and asbestos-containing material
Media Affected: Groundwater, surface water, sediment, and soil
Funding to Date: $48.3 million
Estimated Cost to Completion (Completion Year): $59.3 million (FY2027)
Final Remedy in Place or Response Complete Date: FY2003



Coffee and Franklin Counties, Tennessee

Restoration Background

Arnold Engineering Development Center is a test facility for the Air Force Material Command. Its primary mission is to simulate flight conditions in aerodynamic, propulsion, and space ground-testing facilities. The installation also conducts research and applies new technology to improve facilities and associated testing techniques and instrumentation.

Principal sites at the installation include a landfill, a chemical treatment plant, a main testing area, a leaching pit, a leachate burn area, and a fire training area. The chemical treatment plant, main testing area, and leaching pit contain soil and groundwater contaminated with volatile organic compounds (VOC). Environmental studies have identified 24 sites, of which 6 remain active. Interim Remedial Actions (IRA) have begun at five of these sites. The remaining site is still under investigation.

Between FY88 and FY94, the installation removed 37 underground storage tanks (UST). In FY94, several IRAs were initiated, including (1) installation of groundwater extraction and treatment systems at two landfills, (2) provision of city water to nearby residents, (3) installation of a skid-mounted air stripper to treat contaminated surface water, (4) ex situ biological treatment of soil at a leachate burn area, and (5) removal by reverse osmosis technology of surface water contaminated with heavy metals and polychlorinated biphenyls (PCB) at the steam plant ash pits. All IRAs were completed in FY95.

During FY89, a RCRA Facility Assessment identified 110 solid waste management units (SWMU). RCRA Facility Investigations (RFI) were conducted at 13 of these units, and the need for additional sampling was identified for 57. The additional sampling and RFI fieldwork was completed in FY94. Preliminary Assessments also were completed for all remaining sites, and RCRA closure was approved for four hazardous waste facilities in FY94.

In FY91, the installation formed a technical review committee (TRC), which worked closely with EPA and state regulatory agencies in partnering sessions to meet all regulatory requirements. In FY95, the TRC was converted into a restoration advisory board (RAB), which meets quarterly. Agenda items considered by the RAB include restoration updates, project status, and the Relative Risk Site Evaluation process.

In FY95, the RFI Phase I Report was completed, and confirmatory sampling was completed for Site 19. The installation also implemented four Interim Actions, including low-temperature thermal treatment of soil contaminated with VOCs and installation of a groundwater extraction and treatment system.

In FY96, the installation completed Remedial Designs (RD) for modified RCRA landfill caps at Sites 1 and 3. These RDs constitute the final actions for those sites. The installation also implemented three interim corrective measures to treat contaminated groundwater.

FY97 Restoration Progress

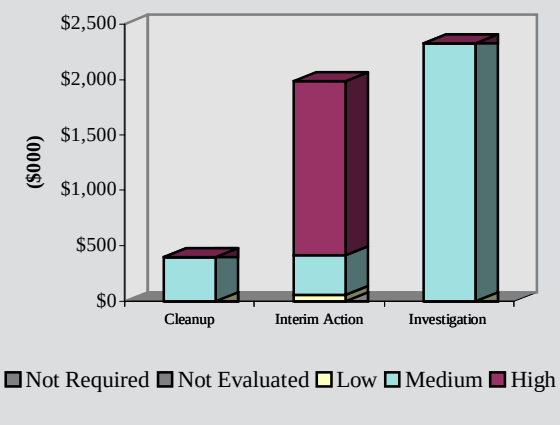
The installation constructed 36 wells to monitor groundwater for Site 19. At three other sites, the installation performed a corrective measures study (CMS) for final action and completed one of two planned landfill caps. The installation also employed on-site laboratories, rotosonic direct-push drilling technology, joint design workshops, and risk evaluations at various sites to accelerate fieldwork and improve site management.

RAB efforts in FY97 included benchmarking demonstration programs at Charleston and Wright-Patterson Air Force Bases and the use of geophysics to expedite site characterization.

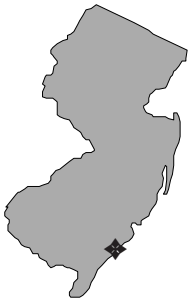
Plan of Action

- Add solvent recovery effort to current cleanup activities at Site 8 in FY98
- Implement additional source containment at Site 6 in FY98
- Complete and analyze results from a phytoremediation pilot study and ZVID (zero valent iron destruction of chlorinated compounds) reactor pilot study in FY98
- Improve decision-making process by using statistical control charts to plot monitoring well data at Sites 1 and 3; this analysis will reveal trends in contamination movement at the sites

FY98 Funding by Phase and Relative Risk



Size: 280 acres
Mission: Provide Air National Guard training
HRS Score: 39.65; placed on NPL in August 1991
IAG Status: Federal Facility Agreement signed in July 1993
Contaminants: VOCs, SVOCs, lead, copper, and pesticides
Media Affected: Groundwater and soil
Funding to Date: $1.5 million
Estimated Cost to Completion (Completion Year): $2.2 million (FY2004)
Final Remedy in Place or Response Complete Date: FY2001



Pleasantville, New Jersey

Restoration Background

Atlantic City International Airport is a Federal Aviation Administration (FAA) facility. It was placed on the National Priorities List (NPL) in 1991 because of its proximity to the South Branch of Doughty's Mill Stream, which flows into Upper Atlantic City Reservoir, a source of drinking water for local residents. In addition, a sole-source aquifer underlying the FAA facility contributes 85 to 90 percent of the watershed for the Upper Atlantic City Reservoir. Sites located at the facility are the FAA salvage yard, the FAA jet fuel farm, the FAA fire training facility, and the FAA's old landfill.

The 177th Fighter Wing, New Jersey Air National Guard (ANG), is a tenant at the FAA facility. The installation's mission is to maintain fighter aircraft on continuous peacetime air defense alert to preserve U.S. air sovereignty. During wartime, the mission is to mobilize personnel and equipment for deployment to designated locations and to use air-to-air munitions in strategic defense of the North American continent. The ANG sites were not ranked for the NPL, but the ANG facility is on the NPL because it is a tenant on FAA property.

A Preliminary Assessment (PA) for the ANG facility was completed in November 1989. The PA identified six sites. The PA recommended Site Inspections (SI) at all six. Two of the six sites (Sites 1 and 4) were found to be sites that the FAA was investigating and were referred to the FAA for further investigation. None of the ANG sites are suspected of contributing contamination to groundwater. An SI was completed by HAZWRAP in FY95 on Sites 2, 3, 5, and 6.

A Memorandum of Agreement (MOA) between the FAA and the Air National Guard Readiness Center (ANGRC) was signed in FY95. The MOA stipulates that the FAA will perform any additional studies, and the Remedial Design and Remedial Action if necessary, at ANG sites. ANGRC will provide funding. In FY95, the ANGRC transferred $300,000 to FAA to perform work under an SI Addendum for additional soil and groundwater sampling at Sites 2, 3, 5, and 6.

In June 1996, fieldwork required under the SI Addendum continued, allowing the review of the draft SI Report by the FAA.

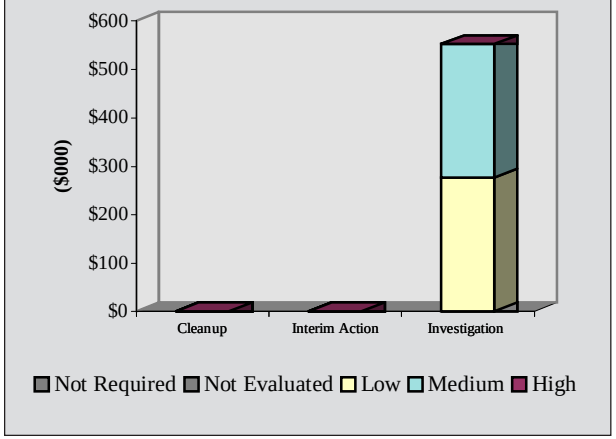
FY97 Restoration Progress

The SI Addendum was completed in FY97. Relative risk assessment was completed at Sites 2, 3, 5, and 6. A technical review committee (TRC), which meets every 6 weeks, helped resolve issues with regulatory agencies and contributed to successful partnering. The TRC met with the state Pinelands Commission and with local community representatives to resolve issues. The SI addendum is still being reviewed by the FAA and has not been sent to state regulators.

Plan of Action

- Initiate Remedial Investigation in FY98

FY98 Funding by Phase and Relative Risk



Bangor Naval Submarine Base NPL

Size: 6,692 acres
Mission: Provide support base for Trident submarines
HRS Score: 30.42 (Bangor Ordnance Disposal); placed on NPL in July 1987
55.91 (Bangor Naval Submarine Base); placed on NPL in August 1990
IAG Status: Federal Facility Agreement signed in January 1990
Contaminants: TNT and RDX residues, Otto fuel residues, ammonium picrate, electroplating wastes, dinitrotoluene, benzene, PCBs, pesticides, herbicides, and chlorinated organic compounds
Media Affected: Groundwater, soil, and sediment
Funding to Date: $71.3 million
Estimated Cost to Completion (Completion Year): $23.5 million (FY2008)
Final Remedy in Place or Response Complete Date: FY2006

Silverdale, Washington

Restoration Background

From the early 1940s until it was commissioned as a submarine base in 1977, Bangor Naval Submarine Base was used for storage and shipment of munitions. Most of the environmental contamination at the installation originated from the detonation, demilitarization, and disposal of explosive ordnance. The Navy conducted an Initial Assessment Study in FY83 that identified 11 sites requiring further investigation because of suspected soil and groundwater contamination.

In FY90, the Navy, EPA, and the state of Washington signed a Federal Facility Agreement. Investigation of 22 sites was recommended. These sites were grouped into seven operable units (OU) for the Remedial Investigation and Feasibility Study (RI/FS).

Between FY91 and FY95, RI/FSs were completed for all seven OUs. Also during this time period, several Records of Decision (ROD) were signed and updated: a ROD and an update for OU1 (FY91); an interim ROD (FY91) and an update (FY94) for OU2; RODs for OU3 and OU5 (FY93); a ROD for OU4 specifying no further action (FY94); a ROD for OU6 (FY94).

Early actions have involved removal of underground storage tanks (UST) from four UST sites. Removal Actions at OU7 consisted of removing drums and reconstructing a bermed area. In FY95, the installation discovered and added an eighth OU and conducted a Removal Action to provide alternative drinking-water supplies to residences near the installation.

The installation completed a community relations plan in FY93. Partnering sessions with regulatory agencies have expedited the cleanup of several contaminated areas. The sessions streamlined the decision-making process by reducing the number of deliverables and allowing resolution of issues in person rather than through formal review comments, responses, and revisions.

A technical review committee was formed in FY87 and was converted to a restoration advisory board (RAB) in FY96. The RAB has held public workshops and several tours of the installation. The installation also completed a Remedial Design (RD) for OU2 and an RD for soil for OU6. Remedial Action (RA) activities were started at OU2, OU6, and UST 1.

The installation initiated long-term monitoring (LTM) at Sites 10 and 26 at OU7 during FY96 and continued 5-year monitoring at OU3. A ROD was signed for OU7, and an RD for OU7 was developed in FY96.

FY97 Restoration Progress

The installation completed the RA for soil and began an RA for groundwater at OU2. Five-year monitoring at OU3 continued. The RA for groundwater and off-site disposal of soil began at OU7. The installation constructed and began to operate a pump-and-treat containment system at OU8. The RA continued, began, and was completed at UST 1, UST 4, and OU1 (groundwater), respectively. The installation implemented operation and maintenance and LTM at OU7. The installation also completed the RI/FS and operated the pump-and-treat system at OU8.

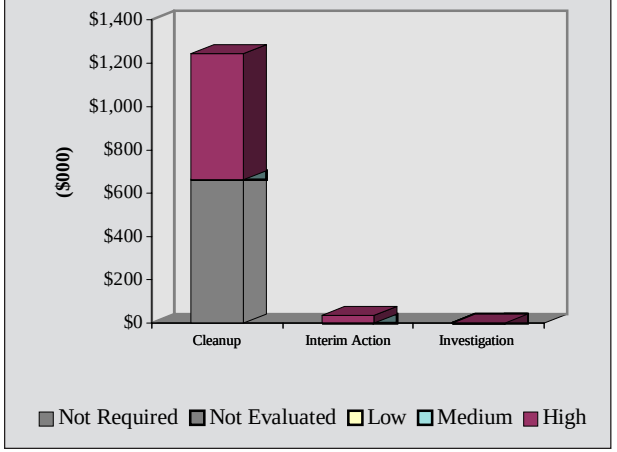
The installation was able to expedite document review by sending documents directly to RAB members. The contents of the documents were discussed with the appropriate regulatory agencies before document distribution.

Some activities scheduled for completion in FY97 were delayed because the scope of OU8 was expanded from presumptive remedies to include innovative technologies and natural attenuation.

Plan of Action

- Sign the ROD, complete the RD, and begin the RA for OU8 in FY98, FY99, and FY00, respectively
- Complete RAs at UST 1 and UST 4 in FY98

FY98 Funding by Phase and Relative Risk



Barbers Point Naval Air Station — BRAC 1993

Size: 3,833 acres
Mission: Maintain and operate facilities and provide services and material support to aviation activities and units of the operating forces
HRS Score: NA
IAG Status: None
Contaminants: PCBs, heavy metals, petroleum hydrocarbons, pesticides, solvents, and asbestos
Media Affected: Groundwater and soil
Funding to Date: $19.3 million
Estimated Cost to Completion (Completion Year): $46.2 million (FY2009)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2004

Barbers Point, Hawaii

Restoration Background

In July 1993, the BRAC Commission recommended closure of Barbers Point Naval Air Station. The installation is slated for operational closure in 1999.

In the early 1980s, a Preliminary Assessment (PA) identified nine sites at the installation. Contamination sources at the facility include disposal pits, a pesticide shop, a landfill, and transformer sites. Only three sites required further investigation. In FY93, an Expanded Site Inspection determined that only one of the three sites required further investigation. Primary contaminants, which affect groundwater and soil, include polychlorinated biphenyls (PCB) and heavy metals.

In FY94, the installation began the Remedial Investigation and Feasibility Studies (RI/FS) for 17 areas identified for further investigation. In the same year, after an initial site characterization, two groups of underground storage tanks (UST) were added to the sites already identified. Other USTs had been removed in FY92 and FY93. In FY95, some areas on the installation were designated for retention. Further work at the Sanitary Landfill, the Golf Course Maintenance Building, and one group of USTs will be conducted under the Navy Environmental Restoration program.

A restoration advisory board was formed in FY94. The installation also maintains an information repository, which is available to the public. A community relations plan (CRP) was prepared in FY95.

A BRAC cleanup team (BCT) was formed in FY94. The team has helped accelerate the cleanup process through BCT meetings, on-site visits, and concurrent review of documents. The BCT also decided to conduct Interim Removal Actions (IRA) at all sites requiring cleanup and to consider use of boilerplate Records of Decision when possible.

The installation completed an Environmental Baseline Survey in FY94. Nearly all property was classified as Category 7, but further investigation was required because the installation had not determined whether groundwater had been affected by historical activities. Three properties identified for further investigation during the PA were classified as Category 6. This property classification cannot be changed until the groundwater investigation is complete.

During FY96, data evaluation under the RI continued for 16 sites, and a sixth round of quarterly sampling in the groundwater investigation was completed. The installation completed a Removal Action for waste at one UST site and a corrective action plan (CAP) for another UST site. A draft land-reuse plan was developed by the Local Redevelopment Authority.

FY97 Restoration Progress

An Environmental Evaluation and Cost Analysis (EE/CA) was prepared for Site 1, and the LRP for the site was completed. EE/CAs also will be started for Sites 2 and 20. A CAP was completed at UST 6. In addition, the BCT determined that the EE/CA and the Remedial Design (RD) for Site 9 were unnecessary.

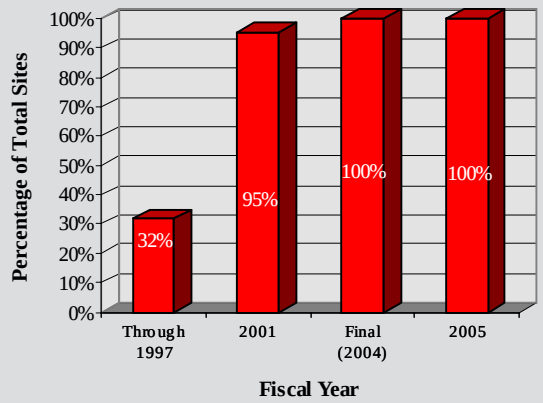
The BCT also concluded that the groundwater beneath nearly all of the base was suitable for transfer, moving most of the base out of Environmental Condition of Property category seven. Relative Risk Site Evaluations have been completed at all sites where required. The latest version of the BRAC Cleanup Plan was completed in February 1997. Three thousand acres have been identified and approved by the appropriate regulatory agencies as uncontaminated.

Some activities scheduled for completion in FY97 were delayed because of funding constraints.

Plan of Action

- Complete RI/FS at Sites 8 through 13, and 19 in FY98
- In FY98, complete EE/CAs and continue monitoring at Sites 1 and 2
- Prepare an EE/CA and complete an RD and an IRA for Site 20 in FY98
- In FY98, close UST 2 and perform quarterly monitoring at UST 6 for 1 year
- Obtain regulatory concurrence for CERFA-uncontaminated acreage in FY98
- Complete long-term monitoring (LTM) for one site in FY98 and another in FY02
- Conduct an IRA at Site 15 and begin an IRA at Site 18 in FY99
- Complete LTM for Sites 1 and 2 in FY99
- Begin LTM at Site 19 in FY03

Sites Achieving RIP or RC Per Fiscal Year



Barstow Marine Corps Logistics Base NPL

Size: 5,688 acres
Mission: Maintain, repair, rebuild, store, and distribute supplies and equipment; formerly conducted industrial operations
HRS Score: 37.93; placed on NPL in November 1989
IAG Status: Federal Facility Agreement signed in October 1990
Contaminants: Heavy metals, PCBs, petroleum hydrocarbons, pesticides, herbicides, and VOCs
Media Affected: Groundwater and soil
Funding to Date: $70.8 million
Estimated Cost to Completion (Completion Year): $69.2 million (FY2029)
Final Remedy in Place or Response Complete Date: FY2009

Barstow, California

Restoration Background

Barstow Marine Corps Logistics Base consists of three distinct areas: Yermo Annex, Nebo Main Base, and the Rifle Range. Typical operations that contributed to contamination at the installation are vehicle maintenance, repair and maintenance of weapons and missile systems, and storage of petroleum and chemical products. The installation was placed on the National Priorities List (NPL) after high concentrations of trichloroethene (TCE) were detected in groundwater monitoring wells.

Initial Assessment Studies and other investigations conducted between FY83 and FY90 identified 38 CERCLA sites and 2 underground storage tank (UST) sites. Site types at the installation include sludge-disposal areas, plating waste disposal areas, low-level radioactive waste storage areas, spill sites, and evaporation ponds. To facilitate cleanup efforts, in accordance with the Federal Facility Agreement (FFA), the installation grouped the sites into seven operable units (OU).

OUs 1 and 2 address groundwater contamination at Yermo Annex and Nebo Main Base, respectively. After an Action Memorandum was completed in FY89, the Navy installed an activated carbon groundwater treatment system to address volatile organic compounds (VOC) in the Yermo Main Base drinking-water system. In FY93, an Interim Remedial Action at OU2 provided potable water to nearby residents. In FY93, a Treatability Study using a pilot-scale extraction well and an air-sparging system was completed at OU1 to determine the groundwater recovery rate needed to control off-base migration of the contaminant plume. During FY95, the installation conducted two pilot-scale studies at OU2, one for air sparging with vapor extraction and the other for a groundwater pump-and-treat system. In the same year, a Time-Critical Removal Action was conducted to install carbon filtration in wells at private residences near Yermo Annex. During FY96, the installation completed construction of the groundwater treatment system at OU1 and conducted a Removal Action involving installation of carbon filtration systems in two residential wells.

OUs 3, 4, 5, and 6 address contaminated soil at 36 sites. In FY93, the installation completed a Removal Action to remove industrial waste sludge from the Oil Storage/Spillage and Industrial Wastewater Treatment Plant. The percolation ponds at Site 35 continue to be aerated, and a filter was installed to remove solvents from water before it is discharged into the ponds. In FY94, the installation conducted Removal Actions at two sites to excavate and dispose of contaminated soil. A pilot-scale groundwater treatment study was completed at a landfill site in OU3.

The installation removed 41 abandoned USTs from UST Area 1 in FY92. In FY95, the installation completed an investigation of UST Area 2. In addition during FY95, the installation conducted Remedial Investigation and Feasibility Study (RI/FS) activities at all 38 sites. EPA Region 9 initiated a RCRA Facility Assessment (RFA) at the installation. The expectation is that sites identified during the RFA will be studied under CERCLA as OU1. EPA completed the RFA for 61 sites in FY96.

In FY91, the installation formed a technical review committee, prepared the community relations plan, and established an information repository and an administrative record. Because of lack of public interest, no restoration advisory board has been formed to date.

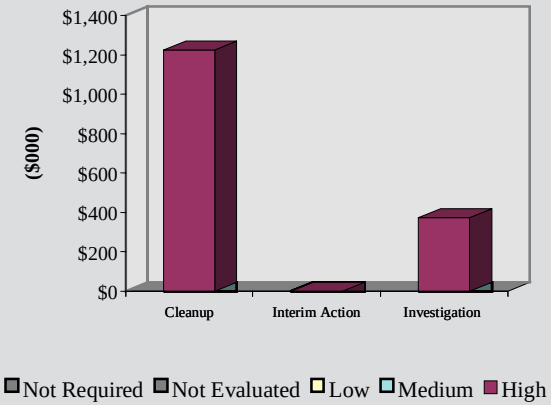
FY97 Restoration Progress

The installation completed the RI/FSs for OUs 5 and 6 and completed a Remedial Site Evaluation and a Removal Action at Site 21. In addition, it completed corrective actions at UST Area 2. The innovative technology UV/Ozone Oxidation was implemented. The installation also participated in a successful partnering effort via the FFA, which helped to drive the program.

Plan of Action

- Complete Record of Decision for OUs 5 and 6 in FY98
- Complete a Remedial Design for Site 23 in FY98
- Complete corrective actions at UST Area 1 in FY98
- Complete Remedial Actions at Sites 20 and 23 in FY98
- Begin long-term monitoring and operation and maintenance at Yermo Annex and Nebo Main Base in FY98
- Install caps at several base landfills in FY98 and FY99

FY98 Funding by Phase and Relative Risk



Size: 679 acres (437 acres upland, 242 acres of water)
Mission: Manage movement of DoD cargo
HRS Score: NA
IAG Status: None
Contaminants: Petroleum hydrocarbons, BTEX, VOCs, SVOCs, dieldrin, heavy metals, and PCBs
Media Affected: Groundwater and soil
Funding to Date: $3.6 million
Estimated Cost to Completion (Completion Year): $10.4 million (FY2002)
Final Remedy in Place or Response Complete Date for BRAC Sites: FY2002

Bayonne, New Jersey

Restoration Background

In July 1995, the BRAC Commission recommended that Bayonne Military Ocean Terminal be closed. The installation is scheduled to close by July 2001.

Contaminated areas identified in previous environmental studies include underground storage tanks (UST), a fire training area, a landfill, storage areas, a battery acid pit, and polychlorinated biphenyl (PCB) spill areas. Groundwater and soil are contaminated with petroleum hydrocarbons and volatile organic compounds (VOC).

In FY89, Remedial Investigation (RI) activities began at 10 sites. Interim Actions at the installation included closing the landfill, removing 450 tons of diesel-contaminated soil, and removing or recertifying PCB-containing transformers.

In FY95, the installation conducted an Environmental Baseline Survey (EBS) and formed a BRAC cleanup team (BCT).

In FY96, the installation formed a restoration advisory board (RAB) with members representing the installation, regulatory agencies, and the community. The BCT met regularly to investigate all areas of concern, to manage the basewide cleanup program, and to allow transfer of all BRAC parcels. The installation began an Environmental Impact Statement (EIS) and a Cultural and Natural Resources Investigation. The U.S. Army Corps of Engineers, Baltimore District, initiated a contract for the RIs on the basis of the EBS delineations.

FY97 Restoration Progress

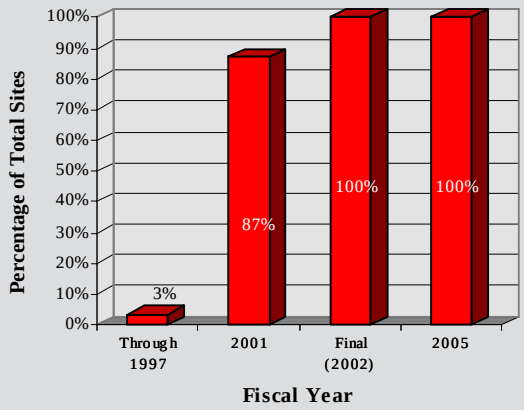
By the first quarter of FY97, the installation had completed the final BRAC Cleanup Plan (Version 1) and a final Environmental Condition of Property Statement for a parcel planned for transfer to the U.S. Coast Guard. The work plan for the Light Rail Parcel was completed ahead of schedule because it was placed on the fast track for accelerated transfer. In addition, the cultural resources inventory was completed and received regulatory concurrence ahead of schedule. Completion of the Natural Resources Inventory and EIS, which was planned for FY97, was delayed until FY98 and FY99 respectively because the draft reuse plan was not available until October 1997.

The Army completed the EBS. Presentations to regulators before document review identified critical areas and expedited review. Issues with regulatory agencies were resolved through increased communication, including conference calls and written comments containing additional details. The BCT reviewed the EBS, established points for inclusion in the BRAC Cleanup Plan, directed the fast-track Light Rail Parcel New Jersey Transit project, conducted the bottom-up review, and reviewed and established cleanup project priorities.

Plan of Action

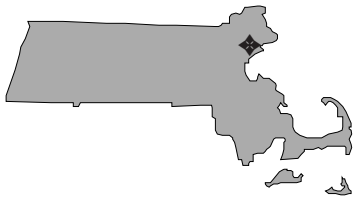
- Complete the CRP in FY98
- Complete Natural Resources Inventory in FY98
- Complete Remedial Investigation/Feasibility Study requirements in FY98
- Remove PCB-contaminated soil at the OU2 LRP New Jersey Transit project in FY98
- Begin a survey of radioactive substances in FY98
- Complete the NEPA EIS in FY99
- Complete Remedial Action in FY02 at sites identified in RI/FS as requiring Remedial Action

Sites Achieving RIP or RC Per Fiscal Year



Bedford Naval Weapons Industrial Reserve Plant NPL

Size: 46 acres
Mission: Design, fabricate, and test prototype weapons and equipment
HRS Score: 50.00; placed on NPL in May 1994
IAG Status: None
Contaminants: Acids, BTEX, incinerator ash, industrial wastes, paints, petroleum/oil/lubricants, photographic wastes, solvents, and VOCs
Media Affected: Groundwater and soil
Funding to Date: $10.8 million
Estimated Cost to Completion (Completion Year): $11.6 million (FY2016)
Final Remedy in Place or Response Complete Date: FY2002



Bedford, Massachusetts

Restoration Background

This government-owned, contractor-operated plant produces and tests prototype weapons and equipment, such as missile guidance and control systems. Four sites have been identified at the installation: Site 1 (incinerator ash disposal areas), containing soil contaminated with ash and heavy metals; Site 2 (components laboratory fuel oil tank), containing soil contaminated with low levels of petroleum/oil/lubricants; Site 3 (northwest groundwater plume), where groundwater is contaminated with a plume of volatile organic compounds (VOC); and Site 4 (former fuel pump/tank BTEX area), containing soil and groundwater contaminated with benzene, toluene, ethylbenzene, and xylene (BTEX).

Remedial Investigation and Feasibility Study (RI/FS) activities began in FY88, and the Phase II RI began in FY92. Development of the work plan and fieldwork continued through FY93 and FY94 to further characterize soil contamination, locate sources of the VOC groundwater plume, and characterize migration of contaminants in groundwater.

In FY95, the draft Phase II RI Report was submitted for regulatory review. A fate-and-transport groundwater model was initiated to support the risk assessment, and a Remedial Action Contract was awarded. In cooperation with the Massachusetts Department of Environmental Protection (MADEP), the Navy implemented a Remedial Action (RA), defined under state law as a short-term remedial measure, to contain and remediate the VOC groundwater plume. The treatment system, constructed under an alternative contract vehicle, is expected to prevent migration of VOCs off site.

The installation established a technical review committee (TRC) in FY89 and converted the TRC to a restoration advisory board (RAB) in FY95. A community relations plan (CRP), originally developed in FY89, was updated in FY92. An information repository is maintained at the Bedford Public Library to provide public access to the installation's administrative record.

During FY96, the installation's RAB met bimonthly, the baseline Human Health and Ecological Risk Assessment work plan was completed and submitted to the EPA for approval, and a fate-and-transport report was completed. The RA for the pump-and-treat system at Site 3 continued through FY96, as did the installation's informal partnership and regular meetings with MADEP and EPA.

FY97 Restoration Progress

The RI supplemental field program at Site 4 began. The installation completed construction of the pump-and-treat system at Site 3 in January 1997 and began operation in March 1997. The scheduled completion date for Site 3 is FY04. The RI Phase II report elicited substantial comments from the regulatory agencies. Meetings and discussions with these regulatory agencies have continued.

The RAB continued to meet regularly, and site tours were conducted for the public. Informal partnering will continue to expedite the decision-making process, and site tours, including a workshop, are planned to enhance community involvement.

Some activities scheduled for completion in FY97 were delayed because the RI Phase II Report had received substantial comments from the regulatory agencies. The comments have required extensive internal and external meetings to reach further agreements.

Plan of Action

- Complete the final RI Phase Report in FY98
- Complete the site management plan in FY98
- Complete the supplemental RI Phase II work plan in FY98
- In FY98, complete Records of Decision for no further action at Sites 1 and 2
- Submit the final Human Health and Ecological Risk Assessment in FY98
- Complete the RI/FS for Sites 1 through 4 in FY98
- Update the CRP in FY98

FY98 Funding by Phase and Relative Risk